



AVIATION MAINTENANCE SAFETY CONFERENCE

2004

Explosive Safety and Security

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AVIATION MAINTENANCE SAFETY CONFERENCE

Explosive Safety and Security

- References and Definitions**
- Explosive Mishap Related Deaths/Injuries**
- Frequent Problems found on Surveys and in the fleet**
- Small Arms Mishaps**
- What can Code 43 do for you?**

Explosive Safety and Security

References for Explosive Safety

- OPNAVINST 3750.6R**
- OPNAVINST 4790.2H**
- OPNAVINST 5100.19D CH1**
- OPNAVINST 5102.1C INT CH2-5**
- OPNAVINST 5530.13C**
- OPNAVINST 8000.16B**
- NAVSEA OP4**
- NAVSEA OP5**

Explosive Safety and Security

Definitions for Explosive Safety Deficiency Reporting

Explosives Mishap

- An incident or accident involving conventional ordnance, ammunition, explosives, explosive systems and devices, resulting in an UNINTENTIONAL detonation, firing, deflagration, burning, launching of ordnance material (including ordnance impacting off-range), leaking or spilled propellant fuels and oxidizers (Less OTTO II Fuel) or chemical agent release.**
- Even if ordnance system works as designed, IF HUMAN ERROR CONTRIBUTED TO AN INCIDENT OR ACCIDENT resulting in damage, death, or injury. REPORT THE EVENT as an**

Explosive Safety and Security

Definitions for Explosive Safety Deficiency Reporting

Conventional Ordnance Deficiency

- Malfunction, observed or induced defect, or improper storage involving conventional ordnance, explosives, ammunition, explosive systems, devices, including weapon system components that come in direct contact with the ordnance (e.g. ammunition, explosives, missiles) and armament handling and support equipment used to fire, handle, load, store, or transport ordnance.**



Total Explosive Mishap Related Deaths/Injuries as of FY 02

<u>DEATHS</u>	Aviation	Surface	Shore	Submarine	Total
1998	0	0	0	0	0
1999	1	0	1	0	2
2000	0	0	0	0	0
2001	6	0	0	0	6
2002	0	0	0	0	0
<u>INJURIES</u>					
1998	7	7	7	1	22
1999	10	5	9	0	24
2000	12	2	8	0	22
2001	12	3	7	0	22
2002	4	5	1	0	10

***79 Deaths and 622 Injuries (Since Fiscal 1985)**

Data DOES NOT include Marine Corps Ground Mishaps



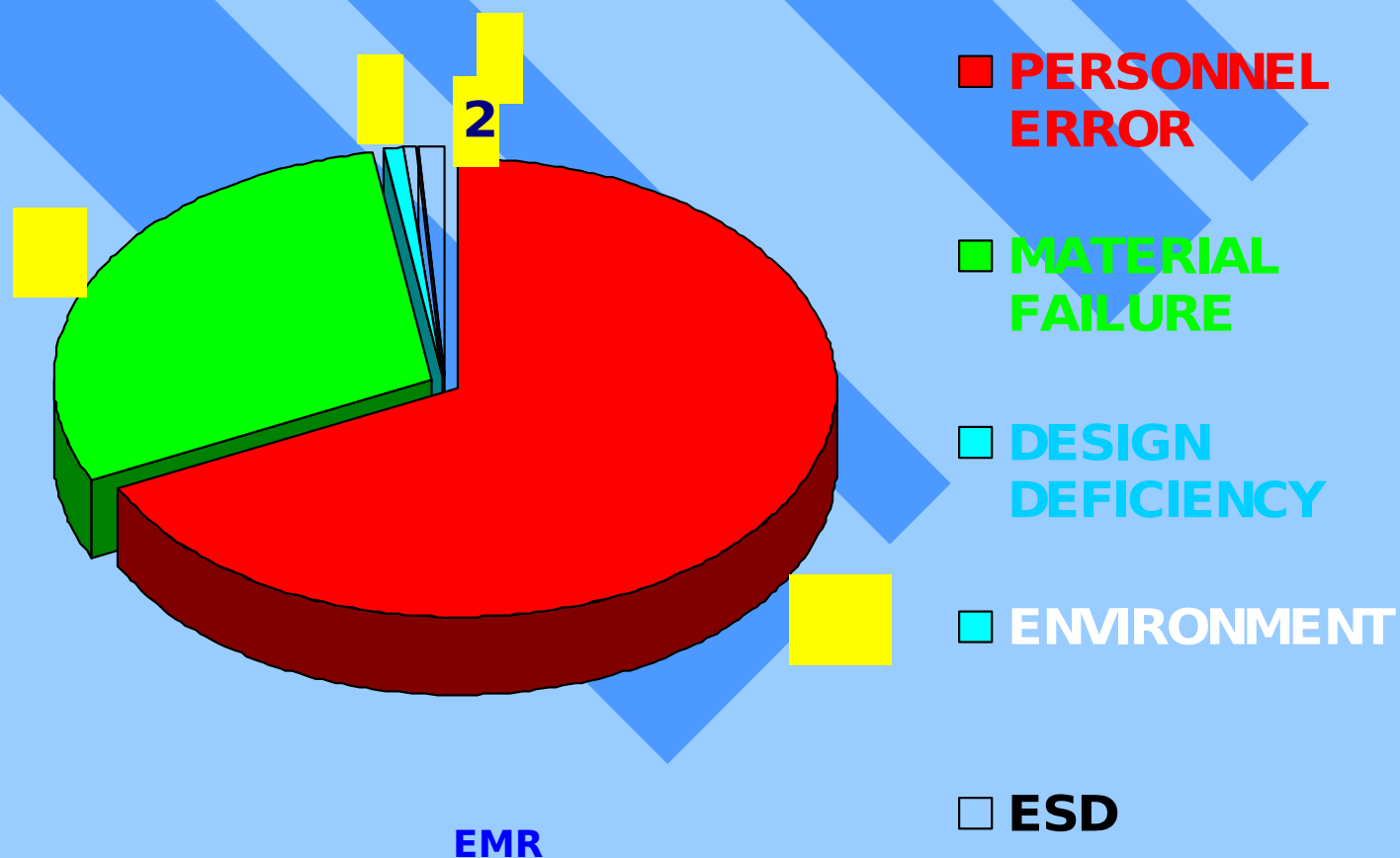
Total Explosive Mishap Related Deaths/Injuries as of Oct 03

<u>DEATHS</u>	Aviation	Surface	Shore	Submarine	Total
1999	1	0	1	0	2
2000	0	0	0	0	0
2001	6	0	0	0	6
2002	0	0	0	0	0
2003	0	0	0	0	0
<u>INJURIES</u>					
1999	10	5	9	0	24
2000	12	2	8	0	22
2001	12	3	7	0	22
2002	4	5	1	0	10
2003	12	9	7	0	28

***79 Deaths and 672 Injuries (Since Fiscal 1985)**

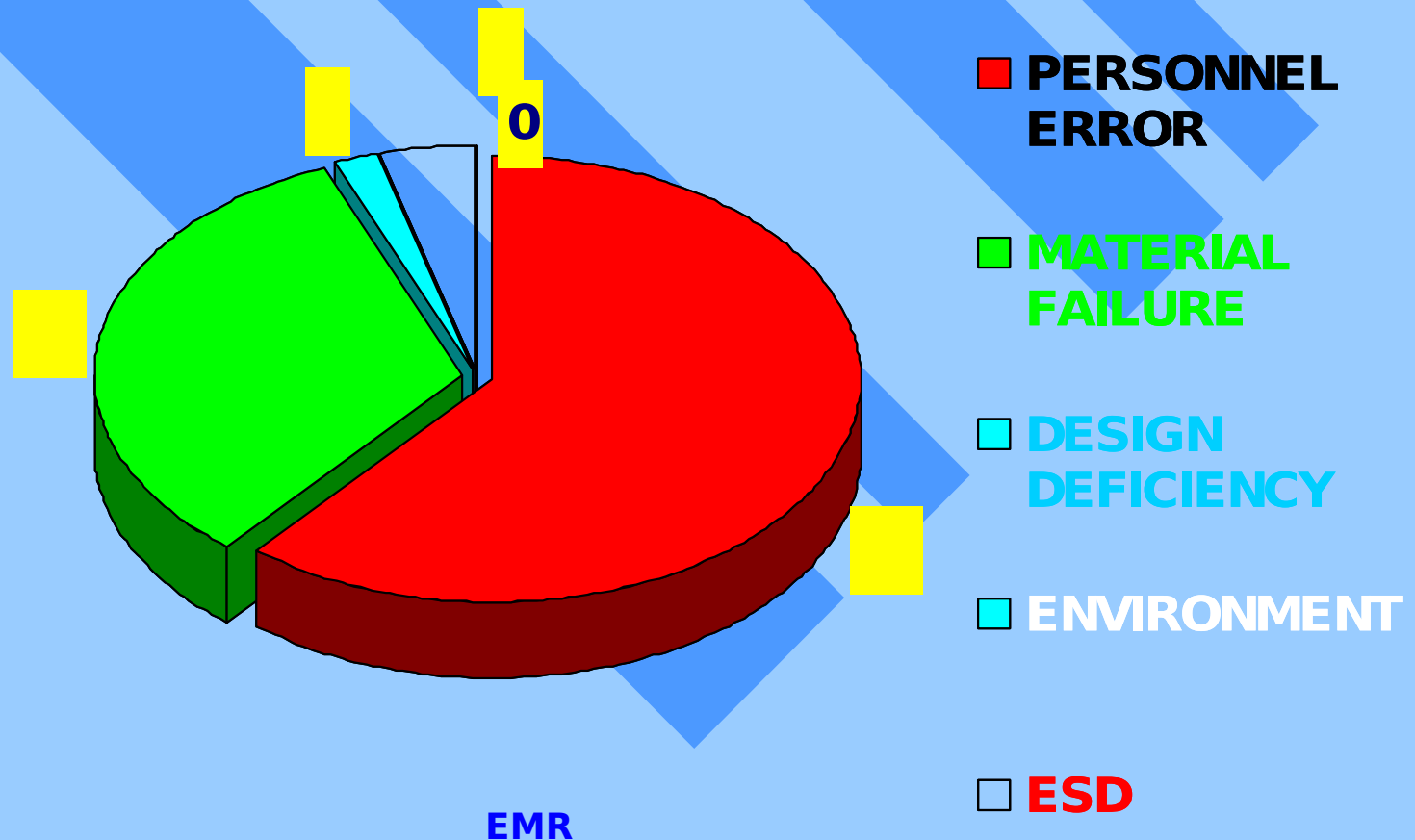
Data DOES NOT include Marine Corps Ground Mishaps

EXPLOSIVES MISHAP REPORTS FOR FY 2003



EXPLOSIVES MISHAP REPORTS

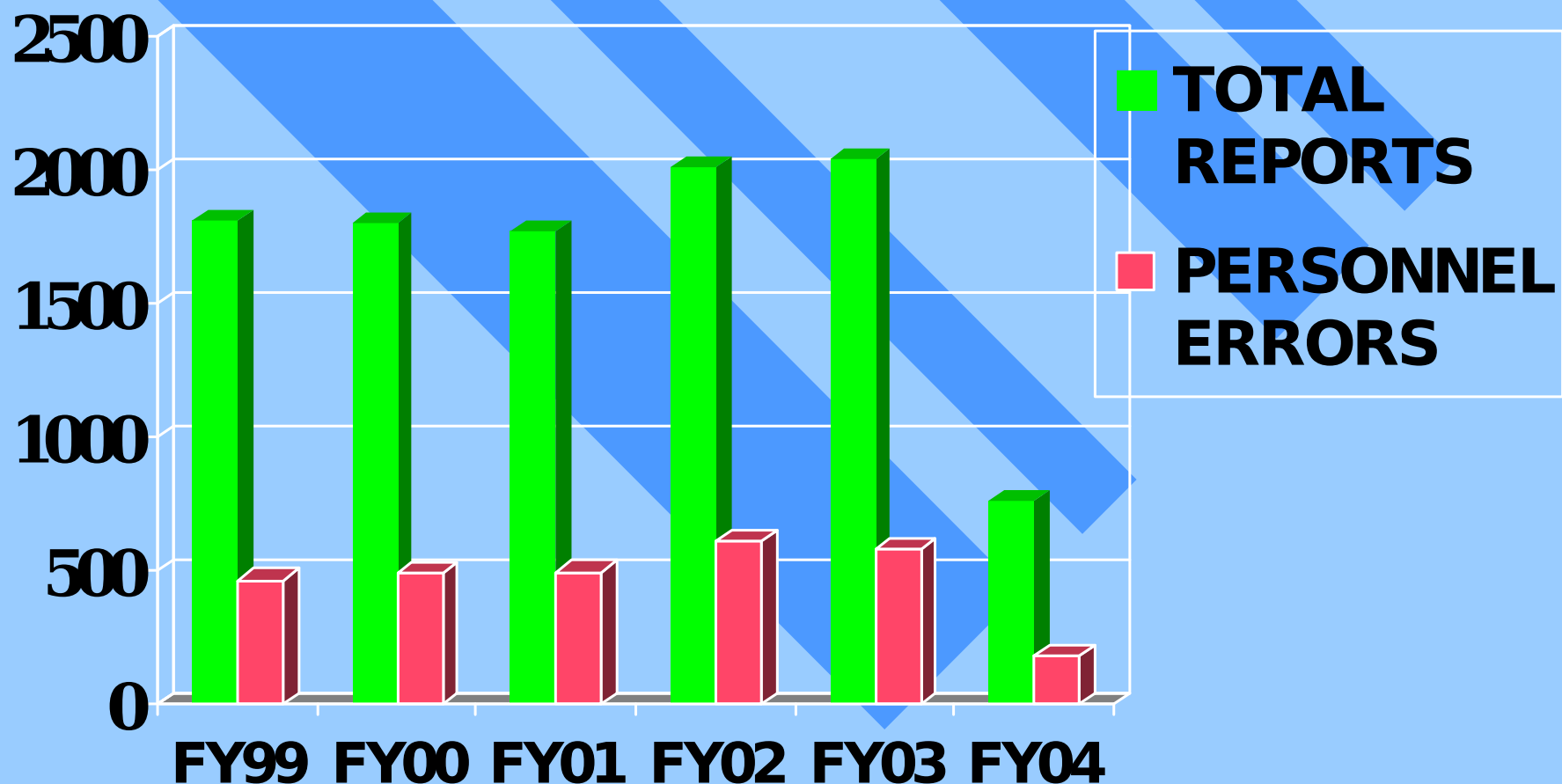
FOR FY 2004





PERSONNEL ERROR RATE

Personnel Errors To the Number
of Reports as of FY 2004





WHO'S AT FAULT FY 2003

■ **ORDNANCE**

■ **MAINT/AIRCREW/
PILOT**

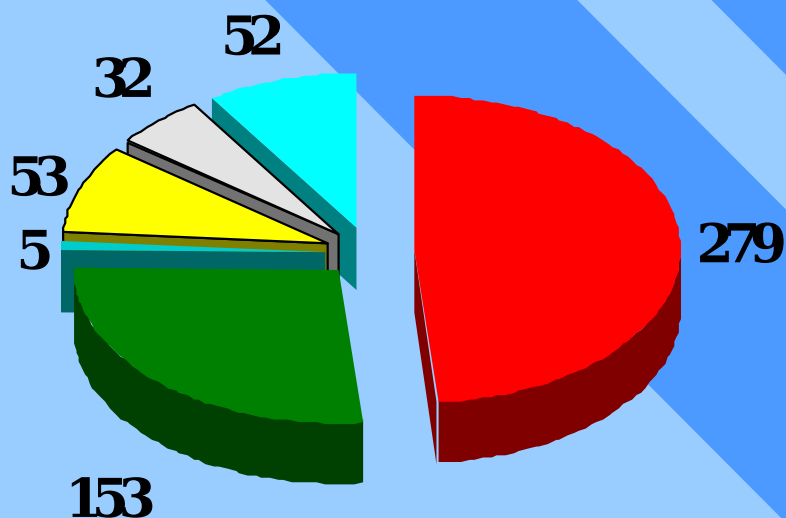
■ **SHIPBOARD**

■ **SHIPPING ACTIVITY**

■ **SEC/WATCH**

■ **OTHER**

i.e.,
Manufacturer,
public,
Foreign, etc.

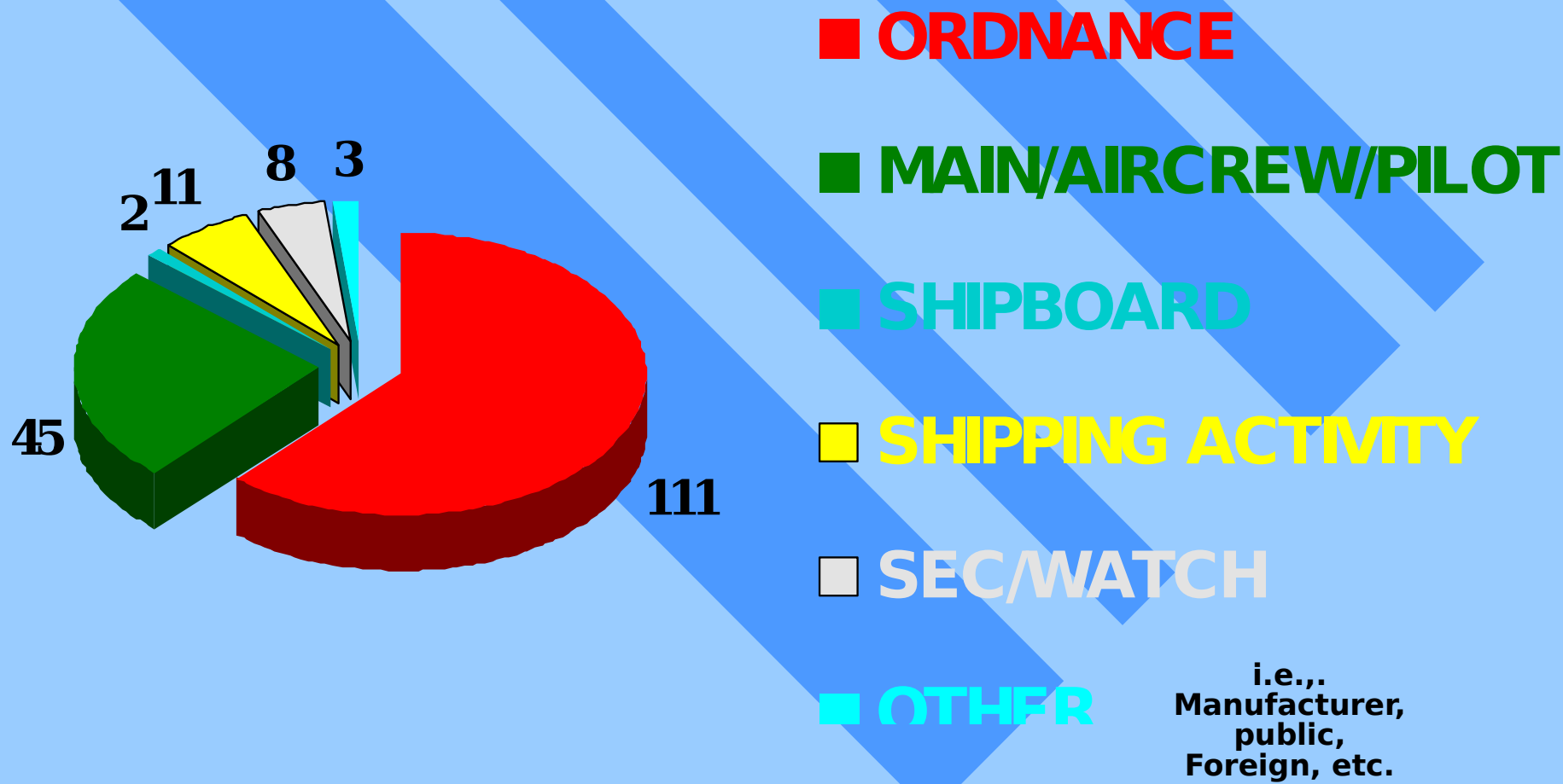


Personnel Errors

WHO CAUSED



WHO'S AT FAULT FY 2004



Personnel Errors

WHO CAUSED

Explosive Safety and Security

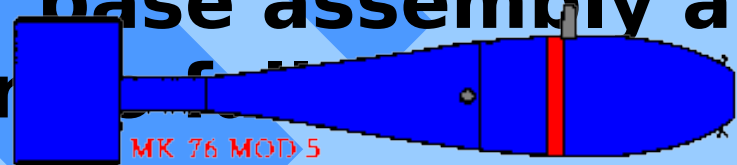
Leading Causes of EMR'S and CODR'S

- ❑ FAILURE TO FOLLOW PROCEDURES**
- ❑ LACK OF PROPER SUPERVISION**
- ❑ INATTENTION TO DETAIL**
- ❑ COMPLACENCY**
- ❑ IMPROPER HANDLING**
- ❑ LACK OF TRAINING**

Explosive Safety and Security

Frequent problems found on Surveys

- ***Problem***: Practice bomb TD AWC 934 for 803 kits not being properly tracked at squadron level
- ***Effect on Maintenance Safety***: Causes possible Things Falling Off Aircraft (TFOA) due to failure of the "O" ring allowing blow by on restrictor base assembly and will allow the weapon to fall out of the aircraft.
- ***Solution***: QASO's need to physically check and verify condition and proper incorporation of the TD



Explosive Safety and Security

Frequent problems found on Surveys

- **Problem:** 1760 bus interface cable assemblies failing due to multiple problems:

- Worn/broken outer locking ring assembly

- Bail rod lanyard failures

- **Effect on Maintenance Safety:** Could lead to shortage of assets and weapon assemblies and report deficiencies to failures
- **Solution:** Continue to inspect cable assemblies and report deficiencies to Fleet Support Teams (FST)



Explosive Safety and Security

Frequent problems found on Surveys

- ***Problem***: Ready Service Locker (RSL) key is not being stored in accordance with OPNAVINST 5530.13C.
- ***Effect on Maintenance Safety***: Could lead to unauthorized access leading to:
 - Tampering
 - Pilferage
 - Personnel Injury

Explosive Safety and Security

Frequent problems found on Surveys

- **Solution:**
- **Comply with instruction by ensuring the key is stored by itself in a 12 gage steel or equivalent container with a three position changeable combination lock.**
- **Re-emphasize importance of duties and responsibilities of Key and Lock custodian. Control and accountability is a must.**

Explosive Safety and Security

Frequent problems found on Surveys

- ***Problem:*** Ordnance-related publications and instructions obsolete / not current. Incomplete or partial checklist.

Effect on Maintenance Safety:

- **Unauthorized / obsolete procedures**
- **Outdated processes**
- **Personnel Injury / damage to equipment**

Explosive Safety and Security

Frequent problems found on Surveys

- **Solution:**
- **Utilize all resources available to include websites.**
- **Communicate needs and requirements to CTPL.**
- **FOLLOW-UP.**

Explosive Safety and Security

Frequent problems found on Surveys

- ***Problem:*** Ordnance items are stowed improperly.
- ***Effect:***
 - **Difficulty identifying serviceable ordnance.**
 - **Unserviceable ammunition not segregated.**
 - **Ordnance/ammunition not protected from environmental conditions.**

Explosive Safety and Security

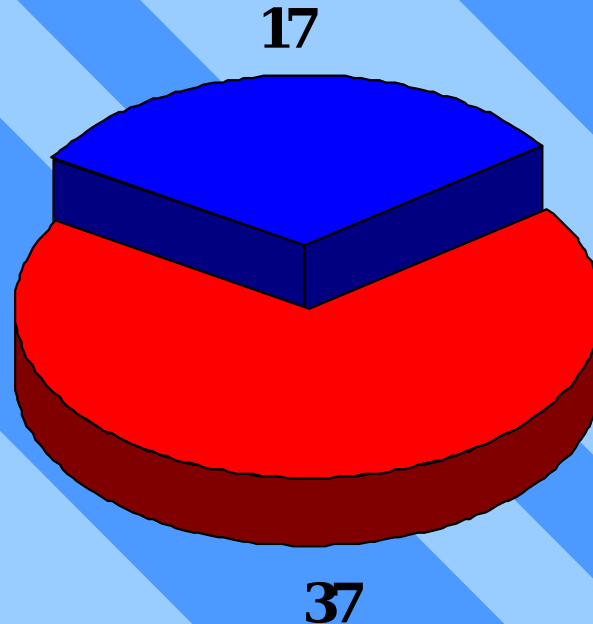
Frequent problems found on Surveys

- **Solution:**
- **Institute effective Explosive Safety training in handling and stowage of explosives and ordnance.**
- **Stress importance of good housekeeping.**



SMALL ARMS MISHAPS FOR FY 2003

Total = 54



■ EMR'S
■ CODR'S

EMR'S

PERSONNEL ERROR-35
MATERIAL FAILURE - 2

INADVERTENT / UNCOMMANDED
FIRING ACCOUNTED FOR 35 OF THE
37 EMR's

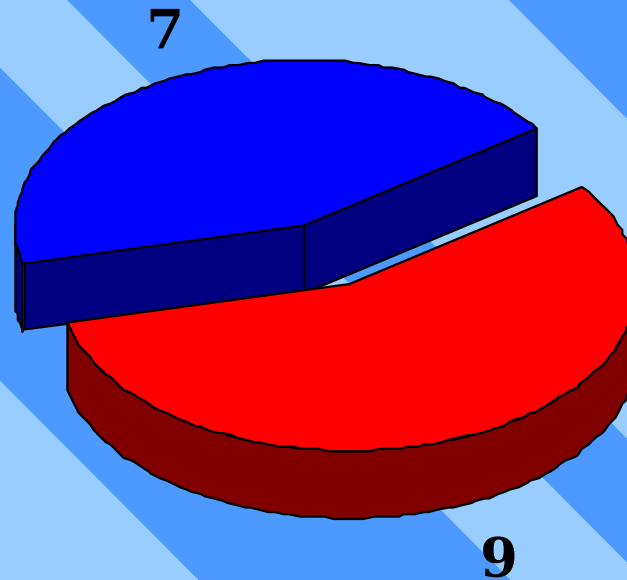
CODR'S

PERSONNEL ERROR -8
MATERIAL FAILURE -9



SMALL ARMS MISHAPS FOR FY 2004

Total = 16



EMR'S

PERSONNEL ERROR - 07

MATERIAL FAILURE - 2

CODR'S

PERSONNEL ERROR - 1

MATERIAL FAILURE - 6

Explosive Safety and Security

What can Code 43 do for you?

- Provide explosive safety surveys**
- Maintain a Recurring Deficiency List**
- Conduct Training**
- Maintain Fleet Liaison Desk**
- Field fleet questions/problems concerning explosive safety**
- Provide advisory to the NOMMP Working and Policy Committee**
- Maintain the Navy's EMR/CODR Database and track recurring stats**





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Explosives and Weapons Division

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- Conduct explosives safety surveys of aviation commands, Marine ground forces, surface commands, and limited shore commands (by request only).
- Furnish recurring deficiency listing.
- Conduct training assist visits, safety presentations, explosives safety program briefs (by request only).
- Field fleet questions, conduct research and provide answers from explosive mishap report (EMR) and the Conventional Ordnance (CODR) deficiency report database.
- Assist fleet personnel in drafting explosive safety articles.

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Last Updated: 10 May 2004



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General Information

Mission - Establish standard policy and procedures for and provide global oversight of: Department of Navy explosives safety, ordnance physical security, ordnance environmental matters, insensitive munitions, and NAVSEA ordnance quality evaluation.

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OFFICIAL BUSINESS

John Majka, Naval PHST Center NAVSURFWARCE Det Earle, serves as the NOSSA technical publications manager and is the point of contact for Explosive Safety Technical Manuals. He can be reached at: 732-866-2923, DSN 449, FAX 2805, or e-mail: john.majka@navy.mil

Publication No.	Title	Current Change/Revision	Comments
OP 4	Ammunition and Explosives Safety Afloat	Rev. 7, 15 Jan 03	Issued on Jul 03 CD
OP 5, Vol. 1	Explosives Safety Ashore	Rev. 7, 15 Jan 01; chg 2 1 Mar 03	Chg 3 will be issued on Jun 04 CD
OP 5, Vol. 3	Explosives Safety, Advanced Bases	Rev. 5, 1 Sep 94	Rev. 6 in FY 04, issued FY05 CD
OP 2173	Approved Handling Equipment for Weapons and Explosives	Rev. 5, 15 Jan 01	Rev. 6 will be issued on Jun 04 CD
OP 3565, Vol. 1	Electromagnetic Radiation Hazards to Personnel, Fuel and other Flammable Material (HERP/HERF)	Rev. 6, 1 Feb 03	Issued on Jul 03 CD
OP 3565, Vol. 2	Electromagnetic Radiation Hazards to Ordnance (HERO)	Rev. 12, 1 Feb 03	Rev. 13 will be issued on Jun 04 CD
OP 3696	Explosive Safety Precautions for Research Vessels	Basic Chg. 1, 15 Apr 73	
S9573-AA-MMA-010	Underway Replenishment Ordnance Equipment and Transfer Units	Rev. 4, 1 May 02	Rev. 5 will be issued on Jun 04 CD
SG420-AP-MMA-010	Periodic Test Arrangements for Ordnance Handling Equipment	Rev. 3, 1 May 02	Rev. 4 in FY 04, issued FY05 CD
SW020-AC-SAF-010	Transportation and Storage Data for Ammunition Explosives, etc.	Rev. 7, 15 Feb 03	Rev. 8 will be issued on Jun 04 CD
SW020-AD-SAF-010	Explosive Safety Accidents and Lessons Learned	Basic	will replace OP 1347 Vol.1 & OP 1014 in FY04, issued FY05 CD
SW020-AF-ABK-010	Motor Vehicle Driver's and Shipping Inspector's Manual	Rev. 2, 1 Apr 03	Issued on Jul 03 CD
SW020-AG-SAF-010 (formerly OP 2165)	Navy Transportation Safety Handbook	Rev. 3, 1 May 02	Rev. 4 will be issued on Jun 04 CD
SW023-AG-WHM-010 (formerly OP 4461)	On-Station Movement of Ammo and Explosives by Truck and Railcar	Rev. 1, 15 Dec 00	Rev. 2 will be issued on Jun 04 CD
SW023-AH-WHM-010 (formerly OP 4098)	Handling Ammunition and Explosives with MHE	Rev. 4, 15 Jan 03	Issued on Jul 03 CD, majority of the MHE requirements have been moved to NAVSUP PUB 538 Rev. 1 also on Jul 03 CD

Questions regarding status and distribution may be directed to: Dawn Lauer on 732-866-2980 or Jeri DiMaggio on 732-866-2976, DSN 449, FAX 2803, or e-mail: dawn.lauer@navy.mil

Status of Explosives Safety Technical Manuals

The Explosives Safety Technical Manual CD-ROM (formerly ESTDC) was issued July 03. The next issue date is planned for June 04

For a more comprehensive listing of explosives safety publications go to: <https://www.nossa.navsea.navy.mil> and obtain password access to the Restricted Explosives Safety Website.



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Questions?

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